

EXHIBIT 3

The logo for Exponent, featuring the word "Exponent" in a serif font with a registered trademark symbol. The letter "x" is stylized with a superscript "e" and a registered trademark symbol.

**The Scientific Credibility of Personal
Injury Claims Related to
Alleged Exposure to W.R. Grace
Asbestos-Containing Products**

**2nd Supplemental and Rebuttal
Report of
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Exposure Categories A and C

Even if individuals in these categories, who personally mixed and installed Grace products, spent their working lifetime in similar activities, they would surely have worked with products from various manufacturers. However, I have retained the highly conservative assumption of 100% exposure frequency for individuals in the A and C job nature categories. That is, I have assumed conservatively that the only asbestos-containing products these claimants have worked with were manufactured by Grace, and that the claimants were exposed daily. This is clearly not true in many, if not all, cases and is one of the reasons that actual cumulative exposures will be less than what I estimate.

Exposure Categories D and E

Claimants in Categories D and E include passers-by or workers either working in proximity to or in the same building where activities involving the installation, mixing, removal, or cutting of Grace asbestos-containing products by others were taking place. Claimants in Categories D and E also could include office and clerical workers, visitors, and others who were not engaged in any construction activities. Although it is possible for any of these people to experience some exposure during the time when installation, mixing, removal, or cutting of asbestos-containing products by others was taking place, it is clearly not scientifically plausible that they spent their entire working time in proximity to those activities involving Grace products. To estimate the exposure frequency for these claimants, I made use of two exposure factors.

- a. Frequency at sites with Grace products: This represents the frequency with which the individuals in the D and E exposure categories, over their working lifetime, could be at a site where a Grace asbestos-containing product was present.
- b. Overlap: For a claimant at a site where a Grace asbestos-containing product was present, this represents the fraction of his or her time that overlapped with the time that these products were being installed, mixed, removed, or cut by others. It is during this time that individuals in Categories D and E are potentially proximally exposed to asbestos from a Grace product.

For example, if an individual visits or works at sites where asbestos-containing products are present for 50% of his or her working lifetime time, and of these sites, 50% involved the use of Grace asbestos-containing products, then he or she, overall, is potentially exposed to Grace products 25% of the time (factor a). If the time during which Grace products were being installed, mixed, removed, or cut by others represents 50% of the time he or she is at these sites (factor b), then, overall, the individual would be exposed to Grace products for 12.5% of his or her time.

Factor a – Site Frequency — In 1984, EPA presented the results of its nationwide survey of asbestos in buildings constructed before 1979 (U.S. EPA 1984). EPA found, among other things, that about 20% (95% confidence interval: 14% to 27%) of buildings surveyed contained some form of friable asbestos-containing materials (ACM), and 5% (0.5%–10%) contained sprayed- or troweled-on friable materials.

- Cumulative exposure at which brake pad epidemiological studies failed to find an association with disease
 - 2.8 f/ml.yrs, for chrysotile asbestos.

Comparison of Exposures to Benchmarks

I used PCME values consistent with other risk assessment practitioners to compare the estimated exposures associated with Grace products to the OSHA PEL. Table 1 shows that the maximum daily exposures to claimants in categories B, D, or E are lower than the current OSHA PEL of 0.1 f/ml. For A and C categories, the daily exposures that are not preceded by a less-than sign (“<”), i.e., those for all vermiculite-only products, are also below the current PEL. Exposures to A and C subsequent to 1973/74, the time when I understand that Grace’s chrysotile-added products were taken off the market, are also below the current OSHA PEL.

Turning to the cumulative exposures displayed in Tables 4 and 5, I note that the cumulative exposures corresponding to categories B, D, or E have values that are below all of the benchmarks, other than background. I reiterate that these values were derived conservatively, and in many cases I have not accounted for a less than 100% exposure frequency. Thus, in almost every case, they significantly overstate actual exposures.

It should be noted that even if one assumes, implausibly, that the D and E claimants were exposed continuously as permanent bystanders to the activities of others and that B category claimants engaged in cutting or removing Grace products every day, their cumulative exposures would not reach the lowest of the benchmarks, 2.8 f/ml.yrs. With the implausible assumption of everyday exposure over any 45-year time period from 1920 to 2007 (approximately 11,000 days of exposure), the maximum cumulative Grace exposures for claimants in the B, D, and E categories would be 2.1 f/ml.yrs, 1.3 f/ml.yrs and 1.5 f/ml.yrs, respectively, each less than the lowest benchmark.

None of the values for B, D, or E exceed the benchmarks of 15 f/ml.yrs or 25 f/ml.yrs, the level above which an affirmative statement can be made of the existence of a causal relationship between exposure and risk, and the lowest level at which asbestosis can occur. The values are orders of magnitude less than the 100-f/ml.yrs benchmark that indicates the lowest level of cumulative exposure that would produce a relative risk of 2 for lung cancer. For the benchmark signifying the exposure at which the mesothelioma relative risk equals 2, no values for the B, D, or E claimants exceed 3.2 f/ml.yrs, an exposure derived using EPA’s value for potency, which does not distinguish between chrysotile and amphibole fibers. All the values are clearly below the doubling doses for chrysotile and Libby amphibole of 79.0 and 8.9 f/ml.yrs, respectively.

Based on these observations, I conclude that it is scientifically implausible that disease in exposure categories B, D, or E can be attributed to exposure to any Grace asbestos-containing product. As demonstrated above, for claimants reporting exposure solely in categories B, D, or E, it cannot be demonstrated in a scientifically sound manner that they had sufficient cumulative exposures from a Grace product to cause disease. Furthermore, these exposures have not been demonstrated scientifically to contribute to the risk of disease, even when added to other significant exposures. Therefore, I conclude that these claims do not have merit and should not